

The Human Ear – Overview

- The ear is divided into 3 interconnecting sections referred to as the outer, middle and inner ear.
- The ear starts to develop around the 6th week of pregnancy.

Outer Ear

- The visible part of the ear is called the pinna or the auricle. The pinna is made of cartilage.
- The outer ear is concerned with the transmission of sound.
- The outer ear consists of the pinna, the ear canal and the outer layer of the eardrum, also called the tympanic membrane.
- The ear canal is filled with air and is about 2.5cm long.
- The skin surrounding the ear canal contains glands that secrete ear wax.
- Ear wax is part of the ears protection mechanism.

Middle Ear

- The Primary function of the middle ear is to conduct sound waves through the tympanic membrane to the cochlea via the ear bones.
- The middle ear is a small air filled space connecting the outer and inner ear.
- The 3 smallest bones in the body are in the middle ear, they are called the hammer (malleus), anvil (incus) and stirrup (stapes).
- These bones are collectively known as the ossicles. Sound waves cause them to vibrate.
- The eustachian tube is also inside the middle ear. The eustachian tube controls the pressure within the ear.

Inner Ear

- The Inner ear has 2 main functions, to convert sound waves into electrical signals for the brain and to maintain balance by detecting position and motion.
- The inner ear has 3 main parts: the cochlea, the semi-circular canals and the vestibule.
- The cochlea is filled with liquid and acts like a microphone, converting sound waves to nerve impulses that travel to your brain via the auditory nerve.
- The vestibule and semi-circular canals both help you to balance.